

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 5, 8 and 17, CANCEL claims 2-4, 6-7, and 9-15, and ADD claims 18-20 in accordance with the following:

1. (Currently Amended) A synchronous control device for controllably driving a servomotor, comprising:

a position control unit for outputting velocity commands at each predetermined cycle on the basis of the position deviation between position feedback from a position detector and position command transmitted at each predetermined sampling cycle from a host control device or a host control unit, and

a velocity control unit for outputting torque commands at each predetermined cycle on the basis of velocity feedback from velocity detectors and the velocity commands, ~~wherein~~

wherein said synchronous control device synchronously controls two servomotors for driving the same control object and further comprises means for reducing the force that acts between the two servomotors on the basis of the force that acts between the two servomotors, and wherein the position control unit comprises:

a position deviation offset calculation processor for calculating the offset amount of the position deviation on the basis of the force that acts between the two servomotors, and

means for adding the position deviation offset amount calculated by the position deviation offset calculation processor to the position deviation,

and wherein the position deviation offset calculation processor computes the force that acts between the two servomotors from the difference in the torque commands given to the two servomotors, and calculates the position deviation offset amount by multiplying the computed difference by a conversion coefficient.

2-4. (Cancelled)

5. (Currently Amended) The synchronous control device according to claim 1,

wherein the ~~position control unit comprises a~~ position deviation offset calculation processor ~~for calculating~~ calculates the offset amount of the position deviation when the difference between the forces on the two servomotors exceeds a fixed value, ~~and means for adding the position deviation offset amount calculated by the position deviation offset calculation processor to the position deviation.~~

6-7. (Cancelled)

8. (Currently Amended) The synchronous control device according to ~~any~~ either of ~~claims 2 to 7~~ claims 1 or 5, wherein the position deviation offset calculation processor comprises adjusting means for changing the position deviation offset amount at a frequency that is sufficiently lower than the frequency band of the position control unit.

9-15. (Cancelled)

16. (Previously Presented) A synchronous control device to controllably drive a servomotor, comprising:

a position control unit to output velocity commands at each predetermined cycle on the basis of the position deviation between position feedback from a position detector and position command transmitted at each predetermined sampling cycle from a host control device or a host control unit; and

a velocity control unit to output torque commands at each predetermined cycle on the basis of velocity feedback from velocity detectors and the velocity commands, wherein

said synchronous control device synchronously controls two servomotors to drive the same control object and reduces the force that acts between the two servomotors on the basis of the force that acts between the two servomotors.

17. (Currently Amended) A synchronous control device, comprising:
at least two servomotors to move a workpiece; and
a computing part to compute a force that acts between the two servomotors, wherein
the synchronous control device controls such that the force between the two servomotors is reduced based on the force that acts between the two servomotors.

18. (New) A synchronous control device for controllably driving a servomotor, comprising:

a position control unit for outputting velocity commands at each predetermined cycle on the basis of the position deviation between position feedback from a position detector and position command transmitted at each predetermined sampling cycle from a host control device or a host control unit, and

a velocity control unit for outputting torque commands at each predetermined cycle on the basis of velocity feedback from velocity detectors and the velocity commands,

wherein said synchronous control device synchronously controls two servomotors for driving the same control object and further comprises means for reducing the force that acts between the two servomotors on the basis of the force that acts between the two servomotors

and wherein the position control unit comprises:

a position deviation offset calculation processor for calculating the offset amount of the position deviation on the basis of the force that acts between the two servomotors, and

means for adding the position deviation offset amount calculated by the position deviation offset calculation processor to the position deviation,

and wherein the position deviation offset calculation processor computes the force that acts between the two servomotors from the actual electric currents that flow into the two servomotors, and calculates the position deviation offset amount by multiplying the computed difference by a conversion coefficient .

19. (New) The synchronous control device according to claim 18, wherein the position deviation offset calculation processor calculates the offset amount of the position deviation when the difference between the forces on the two servomotors exceeds a fixed value.

20. (New) The synchronous control device according to either of claims 18 or 19, wherein the position deviation offset calculation processor comprises adjusting means for changing the position deviation offset amount at a frequency that is sufficiently lower than the frequency band of the position control unit.